

Amendments to the Specification

Please replace the TITLE with the following replacement TITLE:

**A BIT BASED ARITHMETIC CODING USING VARIABLE SIZE KEY
~~CIPHER AND METHOD AND DEVICE USING THE SAME~~**

Please replace the paragraph at page 8 , lines 12-22 with the following replacement paragraph:

As illustrated in Figure 4, the model 116 includes a frequency table 130 (illustrated in Fig. 4 as RAMs 126; and shown in Fig. 5 as 130) and a model controller 128. The frequency counts contained in frequency table 130 represent the probabilities, such as the probabilities shown in Table 1. The plain text 12, the main key 118 and the working keys are input to the model controller 128. The random generator 122 generates one random bit per system clock. As illustrated in Figure ~~[[4]]~~ 5, the frequency table 130 may include two related terms that make it very difficult to trace all information saved in the frequency table 130 except the two related terms. The model 116 can use an address register r to record the closest t bits currently processed, the size of the frequency table 130 is 2^t . In one embodiment, the model 116 is a t -order Markov model and r looks like sliding windows of size t . Initially, the values in the frequency table 130 may be set to 1.